



## Complete Summary

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### TITLE

Ischemic heart disease: percent of patients hospitalized with acute coronary syndrome (ACS) found to be ST-segment elevation myocardial infarction (STEMI) patients who met criteria for reperfusion and received percutaneous transluminal coronary angioplasty (PTCA)/primary percutaneous coronary intervention (PCI) within 120 minutes of acute arrival (inpatient AMI all cohort [inclusive of JCAHO AMI]).

### SOURCE(S)

Office of Quality and Performance (10Q). FY 2005 VHA executive career field network director performance measurement system and JCAHO hospital core measures. Technical manual. Washington (DC): Veterans Health Administration (VHA); 2005 Mar 9. 244 p.

## Brief Abstract

### DESCRIPTION

This measure assesses the percent of patients hospitalized with acute coronary syndrome (ACS) found to be ST-segment elevation myocardial infarction (STEMI) patients who met criteria for reperfusion and received percutaneous transluminal coronary angioplasty (PTCA)/primary percutaneous coronary intervention (PCI) within 120 minutes of acute arrival.

### RATIONALE

Reperfusion, either by thrombolytic treatment or percutaneous transluminal coronary angioplasty (PTCA)/primary percutaneous coronary intervention (PCI), may help to open the occluded coronary artery, restore blood flow, limit infarct size, and reduce mortality in appropriate candidates. Among acute myocardial infarction (AMI) patients with ST elevation or left bundle branch block (LBBB) (STEMI), the effect of reperfusion depends on timing of the therapy. The sooner after the onset of symptoms the therapy is administered, the better the effect. For thrombolysis, numbers needed to treat (NNT) to save one life is 33 in the first 6 hours and 50 in the time window 6 to 12 hours. The effect may be even better with PCI. After 12 hours, the reperfusion is ineffective.

For the non-ST-segment elevation myocardial infarction (NSTEMI) patients, several trials indicate that an early invasive approach is effective in intermediate-

and high-risk patients, while a more conservative approach is indicated in those without electrocardiogram (ECG) changes and enzyme elevations. Additionally, while reperfusion through PTCA/PCI may be appropriate for NSTEMI troponin positive patients, thrombolytic therapy is always contraindicated.

#### PRIMARY CLINICAL COMPONENT

Ischemic heart disease; acute coronary syndrome (ACS); ST-segment elevation myocardial infarction (STEMI); reperfusion; percutaneous transluminal coronary angioplasty (PTCA); primary percutaneous coronary intervention (PCI)

#### DENOMINATOR DESCRIPTION

Hospitalized ST-segment elevation myocardial infarction (STEMI) patients from the Inpatient AMI All cohort (inclusive of JCAHO AMI) who met criteria for reperfusion and received percutaneous transluminal coronary angioplasty (PTCA)/primary percutaneous coronary intervention (PCI) (includes patients already inpatients when acute myocardial infarction [AMI] occurred) (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

#### NUMERATOR DESCRIPTION

The number of patients from the denominator who received percutaneous transluminal coronary angioplasty (PTCA)/primary percutaneous coronary intervention (PCI) within 120 minutes of acute arrival (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

### Evidence Supporting the Measure

#### PRIMARY MEASURE DOMAIN

Process

#### SECONDARY MEASURE DOMAIN

Not applicable

#### EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

#### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [ACC/AHA 2002 guideline update for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction. A report of the American College of Cardiology/American Heart Association Task](#)

[Force on Practice Guidelines \(Committee on the Management of Patients With Unstable Angina\).](#)

- [VA/DoD clinical practice guideline for management of ischemic heart disease.](#)

## Evidence Supporting Need for the Measure

### NEED FOR THE MEASURE

Overall poor quality for the performance measured  
Use of this measure to improve performance

### EVIDENCE SUPPORTING NEED FOR THE MEASURE

Office of Quality and Performance (10Q). FY 2005 VHA executive career field network director performance measurement system and JCAHO hospital core measures. Technical manual. Washington (DC): Veterans Health Administration (VHA); 2005 Mar 9. 244 p.

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

External oversight/Veterans Health Administration  
Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

### TARGET POPULATION AGE

Unspecified

### TARGET POPULATION GENDER

Either male or female

## STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

### Characteristics of the Primary Clinical Component

## INCIDENCE/PREVALENCE

Acute coronary syndrome (ACS) is the leading cause of morbidity and mortality among both men and women in the United States, affecting more than 13.9 million people. The acute presentation of ACS is varied, with acute myocardial infarction (AMI) being the most dramatic of presentations. Annually, AMI affects approximately 1.1 million people in the United States. The mortality rate with AMI is approximately 30%. About once every 29 seconds, an American suffers a coronary event, and about every minute, someone dies from one.

## EVIDENCE FOR INCIDENCE/PREVALENCE

Office of Quality and Performance (10Q). FY 2005 VHA executive career field network director performance measurement system and JCAHO hospital core measures. Technical manual. Washington (DC): Veterans Health Administration (VHA); 2005 Mar 9. 244 p.

## ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

## BURDEN OF ILLNESS

See "Incidence/Prevalence" field.

## UTILIZATION

Unspecified

## COSTS

Unspecified

### Institute of Medicine National Healthcare Quality Report Categories

## IOM CARE NEED

Getting Better

## IOM DOMAIN

Effectiveness  
Timeliness

## Data Collection for the Measure

### CASE FINDING

Users of care only

### DESCRIPTION OF CASE FINDING

Patients from the Inpatient Acute Myocardial Infarction (AMI) All cohort (inclusive of JCAHO AMI)\*

\*Refer to the original measure documentation for patient cohort descriptions.

### DENOMINATOR SAMPLING FRAME

Patients associated with provider

### DENOMINATOR (INDEX) EVENT

Clinical Condition  
Institutionalization  
Therapeutic Intervention

### DENOMINATOR INCLUSIONS/EXCLUSIONS

#### Inclusions

Hospitalized ST-segment elevation myocardial infarction (STEMI) patients from the Inpatient AMI All cohort (inclusive of JCAHO AMI) who met criteria for reperfusion and received percutaneous transluminal coronary angioplasty (PTCA)/primary percutaneous coronary intervention (PCI) (includes patients already inpatients when acute myocardial infarction [AMI] occurred)\*

\*Note:

Refer to the original measure documentation for patient cohort descriptions.

PTCA/Primary PCI: Restoration of blood flow to occluded coronary artery(ies) mechanically by primary PCI. Primary PCI refers to the acute performance of PTCA, stent placement, or other percutaneous interventions performed in the infarct-related artery. PTCA/PCI is identified as International Classification of Diseases, Ninth Revision (ICD-9) procedure codes 36.01, 36.02, 36.05. (PTCA is defined as any percutaneous angioplasty procedure [balloon dilation, atherectomy, rotational ablation, etc.] or combination of procedures performed in the infarct-related artery.) Documentation of cardiac catheterization only is not sufficient to demonstrate a PTCA/primary PCI for this measure.

#### Exclusions

- Documented decision not to treat within 24 hours. The record clearly documents that the patient, patient's family, or legal representative wishes comfort measures only and/or there is agreement that the patient's cardiac

condition and co-morbid conditions preclude aggressive treatment. Documentation such as comfort measures only, hospice care, maintain treatment for comfort, terminal care, physician documentation that care is limited at family's request or due to patient's age or chronic illness, palliative care, supportive care only, will cause the patient to be excluded from the measure.

- Patients transferred in from a community hospital
- Patients discharged to another acute care hospital for any emergency cardiac catheterization or probable PCI
- PCIs attempted but unsuccessful are not included
- PCI performed after 24 hours of acute arrival (or default) OR if inpatient AMI after initial electrocardiogram (ECG) after chest pain onset or first troponin are not considered primary PCIs and will be excluded from this measure.

## NUMERATOR INCLUSIONS/EXCLUSIONS

### Inclusions

The number of patients from the denominator who received percutaneous transluminal coronary angioplasty (PTCA)/primary percutaneous coronary intervention (PCI) within 120 minutes of acute arrival\*

\*Timely PTCA/Primary PCI : Timely is defined as 120 minutes. For patients presenting to the facility, 120 minutes is calculated using the variable of acute arrival date and time and subtracting it from PTCA/primary PCI date and time in the following priority order:

- Time the wire or balloon reached, passed through, or crossed the lesion
- Time of the first balloon inflation
- Time of first cut or excision of lesion
- Time the balloon, rotablate, or cutter was inserted
- Sheath time
- Time of lidocaine/procaine injection
- Procedure/case start time
- For patients already inpatients when they experienced their acute myocardial infarction (AMI), 120 minutes is calculated using the variable representing the electrocardiogram (ECG) date and time OR first positive troponin time (whichever is earlier) closest to the event and subtracting it from the PTCA/primary PCI date and time in the above priority order.

Acute Arrival Time: Defined as the earliest recorded time the patient arrives in the hospital's acute care setting. \*\*

\*\*Refer to the original measure documentation for additional details.

Reperfusion Start Time for AMI as Inpatient: If patient experiences AMI while inpatient, the reperfusion clock begins with the date and time of the first ECG after onset of symptoms indicative of acute coronary syndrome (ACS) while an inpatient OR first positive troponin result whichever is earlier.

### Exclusions

- Patients without an ECG done closest to acute hospital arrival OR with no documented interpretation of the ECG done closest to hospital arrival will fail.
- The positive troponin designation (if earlier) signals the clinical need to ascertain ST-segment elevation myocardial infarction (STEMI) status through the performance of an ECG. Therefore if an ECG is missing, the case fails.

- PCI accomplished after 24 hours of acute arrival (or default) OR if AMI as inpatient initial ECG or first positive troponin (whichever is earlier) are excluded.

#### DENOMINATOR TIME WINDOW

Time window is a single point in time

#### NUMERATOR TIME WINDOW

Fixed time period

#### DATA SOURCE

Administrative and medical records data

#### LEVEL OF DETERMINATION OF QUALITY

Individual Case

#### PRE-EXISTING INSTRUMENT USED

Unspecified

### Computation of the Measure

#### SCORING

Rate

#### INTERPRETATION OF SCORE

Better quality is associated with a higher score

#### ALLOWANCE FOR PATIENT FACTORS

Unspecified

#### STANDARD OF COMPARISON

Internal time comparison  
Prescriptive standard

#### PRESCRIPTIVE STANDARD

Fiscal year (FY) 2005 targets for reperfusion percutaneous coronary intervention (PCI)/percutaneous transluminal coronary angioplasty (PTCA) in 120 minutes ST-segment elevation myocardial infarction (STEMI) (Inpatient AMI All cohort [inclusive of JCAHO AMI]):

- Facility Floor: 45%
- Meets Target: 90%
- Exceeds Target: 95%

#### EVIDENCE FOR PRESCRIPTIVE STANDARD

Office of Quality and Performance (10Q). FY 2005 VHA executive career field network director performance measurement system and JCAHO hospital core measures. Technical manual. Washington (DC): Veterans Health Administration (VHA); 2005 Mar 9. 244 p.

#### Evaluation of Measure Properties

#### EXTENT OF MEASURE TESTING

Unspecified

#### Identifying Information

#### ORIGINAL TITLE

Ischemic heart disease (IHD): reperfusion PCI/PTCA in 120 minutes - STEMI.

#### MEASURE COLLECTION

[Fiscal Year \(FY\) 2005: Veterans Health Administration \(VHA\) Performance Measurement System](#)

#### MEASURE SET NAME

[Cardiovascular](#)

#### MEASURE SUBSET NAME

[Ischemic Heart Disease](#)

#### DEVELOPER

Veterans Health Administration

#### ADAPTATION

Measure was not adapted from another source.

#### RELEASE DATE

2003 Nov

#### REVISION DATE

2005 Mar

## MEASURE STATUS

This is the current release of the measure.

## SOURCE(S)

Office of Quality and Performance (10Q). FY 2005 VHA executive career field network director performance measurement system and JCAHO hospital core measures. Technical manual. Washington (DC): Veterans Health Administration (VHA); 2005 Mar 9. 244 p.

## MEASURE AVAILABILITY

The individual measure, "Ischemic Heart Disease (IHD): Reperfusion PCI/PTCA in 120 Minutes - STEMI," is published in "FY 2005 VHA Performance Measurement System: Technical Manual."

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## NQMC STATUS

This NQMC summary was completed by ECRI on November 29, 2004. The information was verified by the measure developer on December 10, 2004.

## COPYRIGHT STATEMENT

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